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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/709,681	05/22/2004	Carles Borrego Bel	8152ES	3680

23688 7590 12/11/2006

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EXAMINER

BERHANU, SAMUEL

ART UNIT PAPER NUMBER

2838.

DATE MAILED: 12/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/709,681

Applicant(s)

BORREGO BEL ET AL.

Examiner

Samuel Berhanu

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2838

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 May 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 May 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date. _____  | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3 and 5-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Dougherty (US 6,222,341).

Regarding Claim 1, Dougherty discloses in Figures 1-4, automobile management system using two batteries comprising a primary battery (20) designed to power a primary service network (Column 2, lines 57-59) connected to one of its terminals (17), to which a generator (24) is also connected, a second battery (14) designed to power a secondary network (a starter network, element 18) essentially assigned to start-up functions and a switch (302, 402 and 418) managed by a control unit or module (30) Whereby, depending on the status of the charges of both batteries (20) and (14) and the charge demands of said networks (1) and (3), enables current flow between the two networks (12) and (10) in any direction using a unidirectional current flow device (elements 310-314 and 410-414) the can bridge permanently said BCO2 switch (302, 402, 418) located between said two networks (12) and (10) and respectively powered by the mentioned batteries (20) and (14), said unidirectional current flow device (310-314 and 410-414) providing current flow towards the start-up battery (14) smaller than

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the current flow through the BCO2 (302, 402, 418) switch, when it is closed, and also smaller than the current from generator (24) to battery (20) (noted that battery 20 is connected at node 17 and the diodes 310-314 and 410-414 are allowed current flow to the battery 14, Column 1, lines 39-67, Column 3, lines 45-47).

Regarding Claim 2, Dougherty discloses in Figures 1-4, wherein said control unit (30) includes means to detect the condition status of both batteries (Column 4, lines 9-20)

Regarding Claim 3, Dougherty discloses in Figures 1-4, wherein said unidirectional flow device (310-314 and 410-414) connected between the two networks (10) and (12) is a power barrier diode (noted that the diodes are preventing a flow of current from battery 14 to 20).

Regarding Claim 5, Dougherty discloses in Figures 1-4, wherein said controllable switch that connects the battery (20) and the network (10) with the battery (14) and network (12) comprising a switch (302, 418, 402) with BCO (Battery Cut Off) disconnection functions from the battery (20).

Regarding Claim 6, Dougherty et. al. disclose in Figures 1-5, management methods of a car with two batteries, comprising : a first battery (20) designed to power a first device network connected to one of its terminals, to which a generator (24) is also connected, a second battery (14) designed to power a second network essentially assigned to start-up functions and a Bco2 switch ( 302,402) managed by a control unit (30) or module whereby, depending on the status of the charges of both batteries (20) and (14) and the charge demands C1 and C2 of said networks and enables current flow

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between the two networks (Column 3, lines 3-15, Column 4, lines 10-15) in any direction characterized by a) performing a permanent monitoring of the SOC of batteries (20) and (14) ( measuring the voltage levels of the batteries , Column 3, lines 3-15, Column 4, lines 10-15) and the charge demands of C1 and C2 and provide an actuation of said switch BCO2, allowing the connection of one or both batteries (20) and (14) to both the networks and with energy transfer between them ( Energy is transferred from one network to the other when battery 20 is providing charging current to battery 14) and b) providing permanent unidirectional current flow network containing battery B1 to network (2)( Noted that Figures 3 and 4 indicate that the diodes 310-314 or 410-414 provides a permanent connection between the two batteries network, the diodes are designed to prevent only reverse current flow) which includes battery 14 with a current flow smaller than the one circulating through said switch (302 ;or 402), when it is close, and also smaller than the feeding current to battery from generator

Regarding Claim 7, Dougherty discloses in Figures 1-4, wherein the monitoring of the charge status SOC of the a) stage, is complemented with the monitoring of the condition status of the battery (Column 4, lines 9-20)

Regarding Claim 8, Dougherty discloses in Figures 1-4, wherein said b) stage for providing a permanent unidirectional current flow from network (10) to network (12) is made across a unidirectional current flow device (310-314 and 410-414) such as a power diode.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dougherty et. al. (US 6,222,341) in view of Morgan (US 2003/00038611) and Holloway et.al. (US 5,504,416)

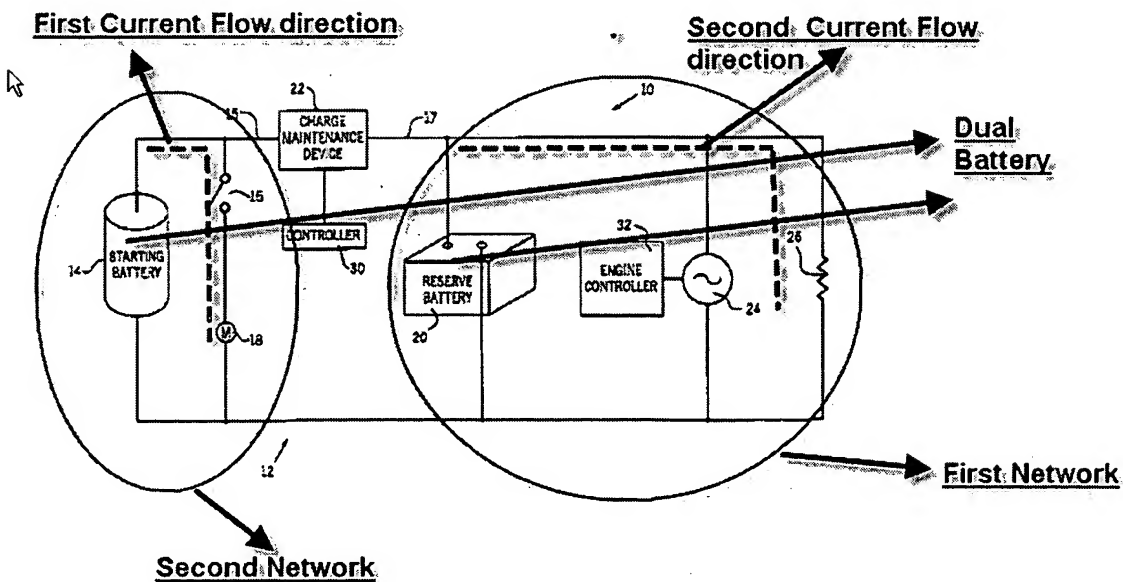
Regarding Claim 4, Dougherty discloses in Figures 3 and 4, characterized because the control module (30) controlling the connection/disconnection of the mentioned switch, includes a microcontroller. Dougherty does not disclose explicitly, a condition status sensor and a charge status sensor. Morgan discloses in paragraph 014, a charge status sensor. Holloway et. al. disclose in Figure 3A, element 14 and Column 7, lines 19-20, a condition status sensor. It would have been obvious to the person ordinary skill in the art at the time of the invention to add a charge status sensor in Dougherty System as taught by Morgan in order to control the battery charging level and prevent overcharging and over discharging. Further, It would have been obvious to the person ordinary skill in the art at the time of the invention to add a condition status sensor in Dougherty System as taught by Holloway et. al. in order to avoid battery damage caused by overcharging or depletion.

### ***Response to Arguments***

5. Applicant's arguments filed 9/10/2006 have been fully considered but they are not persuasive. Applicant argues that the references do not teach or suggest "–the current can be directed to either battery from the other network and other battery as well as provided for the constant and continual sensing of the start-up battery to ensure it is always at a charge level that allows it to start the vehicle by turning over the starter motor ". Since the claims do not have these limitations the argument is considered to be irrelevant.

Applicant argues that there is no teaching or suggestion in the reference " a dual electrical network, a dual battery, dual current flow direction ". This is incorrect.

Dougherty et. al. disclose in Figures 1 and 2, a dual electrical network, a dual current flow direction and a dual battery. See figure below and also see paragraph 2, above on page 2.



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.Applicant also argues that references do not suggest or teach "a constantly sensed system". This is irrelevant, the limitation is not found in the claim.

Applicant also argues that references do not teach "bidirectional current flow". The claims do not have this limitation. Assuming, the applicant meant to refer "any direction" as in Claim 1. The flow of current to the load due to the reserve battery (20), and the flow of current to the element 18 due to the starting battery (14) meet the limitation (see figure above).

### ***Conclusion***

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.



Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel Berhanu whose telephone number is 571-272-8430. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Karl Easthom can be reached on 571-272-1989. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SB

A handwritten signature in black ink, appearing to read 'E-371712', with a stylized, sweeping flourish at the end.

Gary L. Laxton  
Primary Examiner  
Art Unit 2838

12/04/2006